

REMARKS

Claims 1-18 are rejected by the Examiner under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. In rejecting the claims, the Examiner questions the use of the expressions “excellent softness” and “excellent elongation.” Although such expressions are not completely definitive, it is believed that the body of the claims which refer to a non-woven fabric layer having a specific denier and a woven or knitted fabric layer having a specific denier clearly provides the necessary parameters for defining the expressions “low elongation” and “excellent softness.” Accordingly, it is believed that the claims, when taken in context, are not indefinite under 35 U.S.C. § 112, second paragraph, as alleged by the Examiner. Accordingly, it is believed that this rejection has been eliminated.

Claims 1-5, 9-11, 11-15 and 17-18 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § (103a) has been obvious over U.S. Patent 4,145,468 to Mizoguchi et al. Also, claims 6-9, 12, and 16-18 have been rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Mizoguchi et al. in view of US Patent 5,256,429 to Honda et al. These rejections are respectfully traversed.

The present invention is directed to a composite sheet which possesses excellent softness and form stability wherein the composite sheet contains a non-woven fabric layer (1) having ultra fine fibers with a fineness of less than 0.3 denier, a woven or knitted fabric layer (2) containing a yarn made of ultra fine fibers having a fineness of 0.01 to less than 0.3 denier, and a polyurethane resin.

As noted on pages 7 and 8 of the present application, the woven or knitted fabric layer (2) of the present invention is more preferably constructed of ultra fine fibers having a fineness of

0.01 to 0.3 denier. Larger fineness may cause damage of the woven or knitted fabric due to a needle-punching operation for bonding the woven or knitted fabric (2) to the staple of non-woven fabric layer (1) and the damage fibers often come out to the surface of the artificial leather. Thus, since the fibers of the woven or knitted fabric layer (2) which come to the surface have a larger fineness than that of the staple fibers of the non-woven fabric layer (1), an uneven appearance of the artificial leather as well as lower softness is produced. In addition, since the color of the artificial leather changes according to the fineness of the fibers after dying, the fibers of the woven or knitted fabric layer (2) exposed to the surface appears to be a conspicuous defect. Furthermore, since a large fineness of fibers can make the touch of the woven or knitted fabric layer (2) exclusively hard, this can spoil the softness of the artificial leather.

The present invention does not specifically limit the lowest value of the denier of the ultra fine fibers constituting the woven or knitted fabric layer (2). However, in the case that the yarn constructed of excessively fine fibers is used for the production of the woven or knitted fabric layer (2), it is difficult to uniformly control the fineness of the ultra fine fibers, the degree of elongation is increased during the process after removing the sea component and the physical properties of the final product, such as strength, elongation and the like, is largely decreased, thereby reducing the effect of improving the form-stability. Therefore, the fineness of the ultra fine fibers is more preferably more than 0.01 denier and less than 0.3 denier.

As the Examiner will note, claims 1, 13, and 17 have been amended to recite that the woven or knitted fabric layer (2) is made of ultra fine fibers having a fineness of 0.01 to 0.3 denier. Tables 1 and 2 of the present application compare, in Examples 1 to 5 and Comparative Examples 1 and 2, the results achieved when utilizing a denier of 0.04 to 0.13 for the woven fabric as compared to a denier of 3.16 for the woven fabric as shown in Comparative Examples 1

and 2. Table 2 clearly shows the advantageous results achieved in stitching strength, elongation at constant load, stiffness, and surface appearance of the composite sheet of the present invention when compared to that of Comparative Examples 1 and 2. This comparison clearly shows the advantages in providing a woven or knitted fabric layer (2) constructed from a yarn made of ultra fine fibers having a fineness of 0.01 to 0.3 denier.

The Examiner clearly recognizes that the Mizoguchi et al. patent utilizes fibers of woven or knitted fabric having a denier of 3 or less. What the Mizoguchi et al. patent does not appreciate is the importance of providing a woven or knitted fabric layer with a denier of 0.01 to 0.3 denier as defined by the present invention and as discussed in the present application. Since the Applicants have shown within the four corners of the present application the importance of utilizing a specific range for the denier of the woven or knitted fabric layer, as pointed out hereinabove, it is believed that the present invention has certainly established not only a difference from the Mizoguchi et al. patent but an obvious difference which contributes to a composite sheet which possesses low elongation and excellent softness.

In rejecting claim 6-9, 12 and 16-18 under 35 U.S.C. § 103(a), the Examiner relies upon the Honda et al. patent which is merely relied upon to show the use of high twist yarns. However, such a disclosure does not fill the deficiencies of the Mizoguchi et al. patent as pointed out hereinabove, and accordingly, the combination of the Honda et al. patent with the Mizoguchi et al. patent cannot possibly suggest the present invention. Similarly, for the same reasons as discussed hereinabove, the rejection of all of the claims under 35 U.S.C. § 103(a) as being unpatentable over the Honda et al. patent in view of the Mizoguchi et al. patent cannot suggest the present invention, one of the features of which is the importance of the woven or knitted

fabric layer being constructed of a yarn made of ultra fine fibers having a fineness of 0.01 to 0.3 denier.

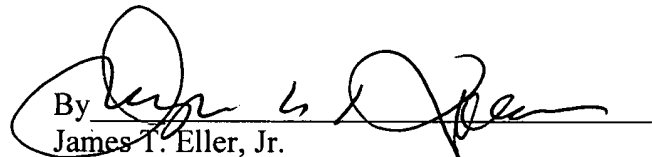
Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and allowance of all of the claims of the present application are respectively requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch (Reg. No. 22,463) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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Attachment: Abstract of the Disclosure